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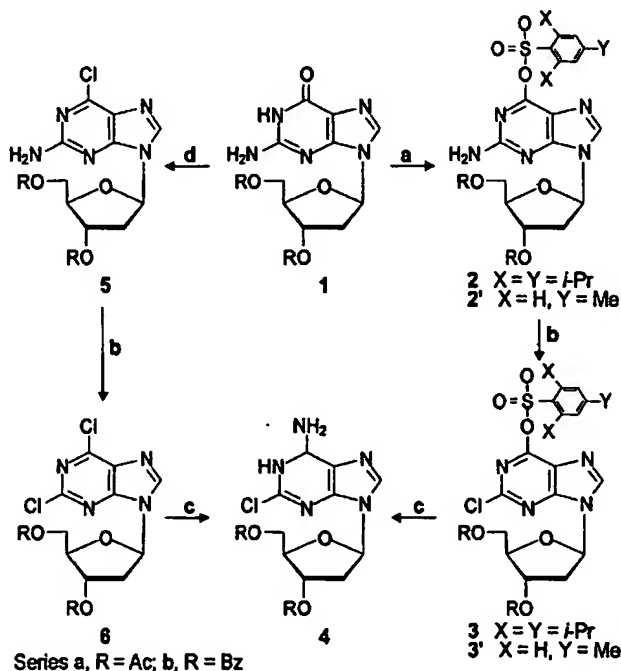
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[Continued on next page]

(54) Title: METHOD FOR THE PREPARATION OF 2-HALO-2'-DEOXYADENOSINE COMPOUNDS FROM 2'-DE-OXYGUANOSINE



(57) Abstract: The present invention is a method for preparing 2-halo-6-aminopurines, and more specifically for preparing the clinical agent cladribine (2-chloro-2'-deoxyadenosine, CldAdo, 4), a drug of choice against hairy-cell leukemia and other neoplasms, from 2-amino-6-oxopurines, which are readily obtained from the naturally occurring compound 2'-deoxyguanosine. According to the methods of the present invention, the 6-oxo group of a protected 2'-deoxyguanosine (1) is converted to a 6-(substituted oxy) leaving group, or alternatively to a 6-chloro leaving group, the 2-amino group is replaced with a 2-chloro group, the 6-(substituted oxy) leaving group, or alternatively the 6-chloro leaving group, is replaced with a 6-amino group or, alternatively, a 2,6-dichloro substituted compound is selectively replaced group, and the protecting groups are removed.

<sup>a</sup> (a) TiPBS-Cl/Et<sub>3</sub>N/DMAP/CH<sub>2</sub>Cl<sub>2</sub>. (b) AcCl/BTEA-NO<sub>2</sub>/CH<sub>2</sub>Cl<sub>2</sub>/-5 to 0 °C. (c) NH<sub>3</sub>/MeOH/CH<sub>2</sub>Cl<sub>2</sub>/Δ. (d) POCl<sub>3</sub>/BTEA-Cl/N,N-dimethylaniline/MeCN/Δ.



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